

FIG. 1C

SpeI

CCCGGTACTAGTCCGGCAGCCGCAACCCGAGCCGAGCCGAGCCGAGCCGAA 300

P G T S P Q P Q P K P Q P Q P Q P Q P K

Acc65I

KpnI

Eco52I

i

CCCGAGCCGAAACCCGGAACCCGGAAGGTACCCGATCATCAGAAAGATGAGTTCGCGC 360

P Q P K P E P E G T G S S E K D E L

NdeI Ppu10I

BfrBI

NsiI

XhoI

EcoRI

SciI

GCCGCAAGATTCCATATGCATCTCGAG 387

FIG. 1D

SIGNAL CLEAVAGE SITE

MGKFTVVAALLLGAVRAE-GSS-

LGCDCC-PQMLRELQETNAALQDVRELLRQQVKEITFLKNTVMECDACG-MQPARTPGTS-

FIG. 2B

SpeI

CCCGGTAAGTCCCGCAGCCCGAACCAGCCCGCAGCCCGCAGCCCGA 300

P G T S P Q P Q P K P Q P Q P Q P K

Acc65I

KpnI

Eco52I

CCCGCAGCCGAACCCGAACCCGAAGGTACCCGATCATCAGAAAGATGAGTGTAGGCG 360

P Q P K P E P E

G T G S S E K D E L

NdeI Ppu10I

BfrBI

NsiI

XhoI

EcoRI

SciI

GCCGCAGAAATCCATATGCCATCTCGAG 387

FIG. 2D

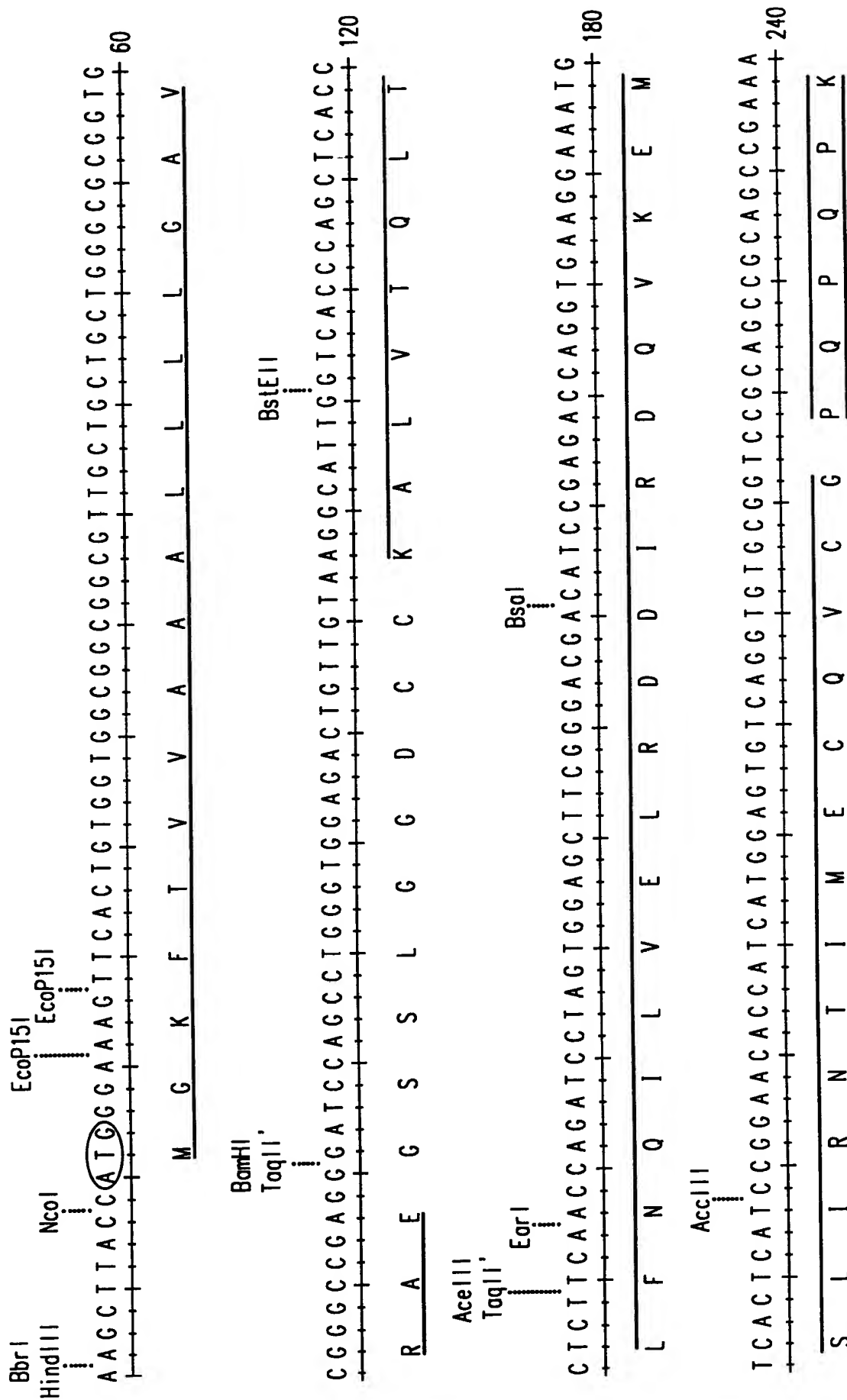


FIG. 3C

GGATCATCAGAAAAGCATGAGTTGTAGCGCGGCCGACAAATTCCAATATGCATCTCGAG

357

NdeI Ppu10I BfrBI NsiI XhoI SclI Eco52I EcoRI

CSSEKDEL

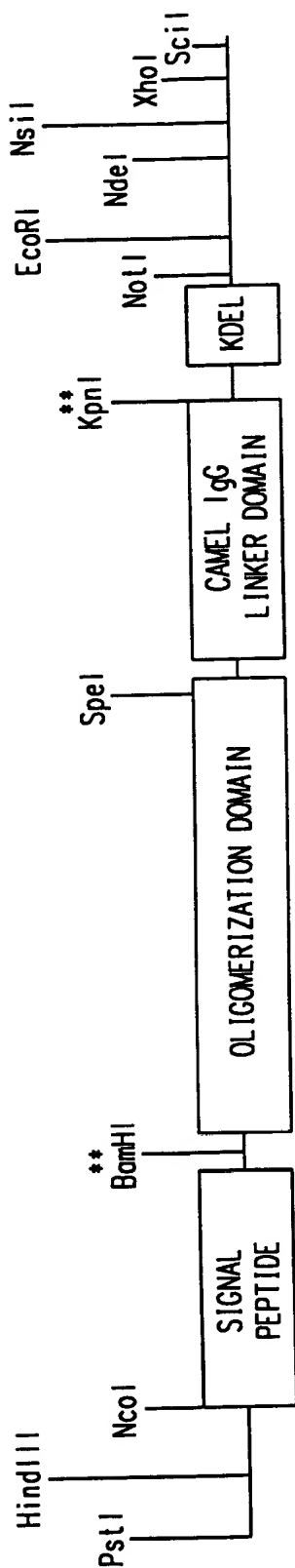


FIG. 4A

SIGNAL CLEAVAGE SITE

M G K F T V V A A A L L L G A V R A E - G S S -

L G G D C C - G E Q T K A L V T Q L T L F N Q I L V E L R D D I R D Q V K E M S L I R N T I M E C Q V C G -

P Q P Q K P Q P Q P Q P Q P K P E P E - G T G S S E - K D E L

FIG. 4B

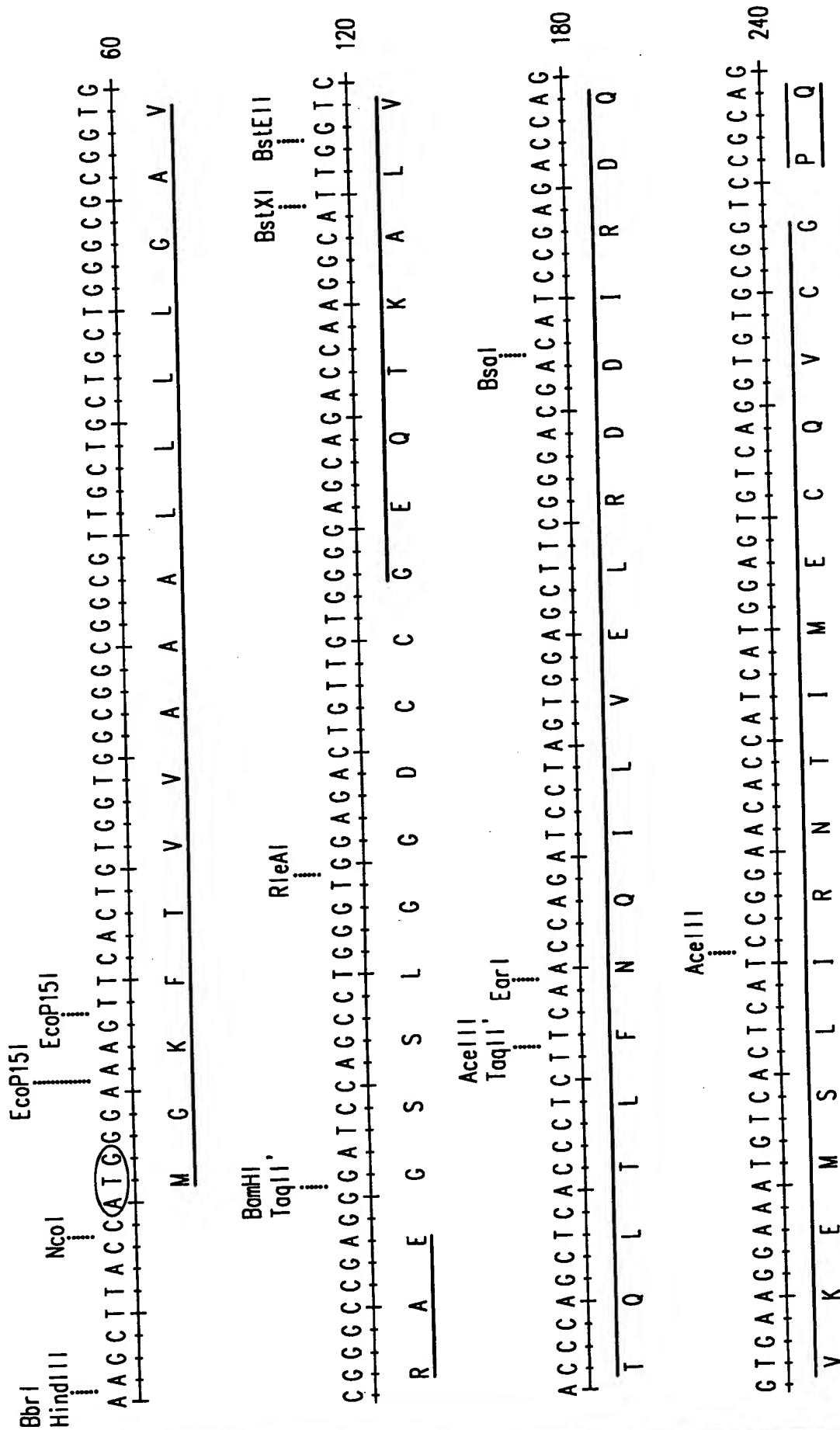


FIG. 4C

CCGGAAGGTACCGGATCATCAGAAAGATGAGTTG**TAG**CGCGCCGACGAATTCATATC
 360
 P E G T G S S E K D E L .
 Acc65I KpnI Eco52I EcoRI NdeI Ppu10I BfrBI

Nsi I
 Xho I
 Scl I
 CATCTCGAG
 369

FIG. 4D

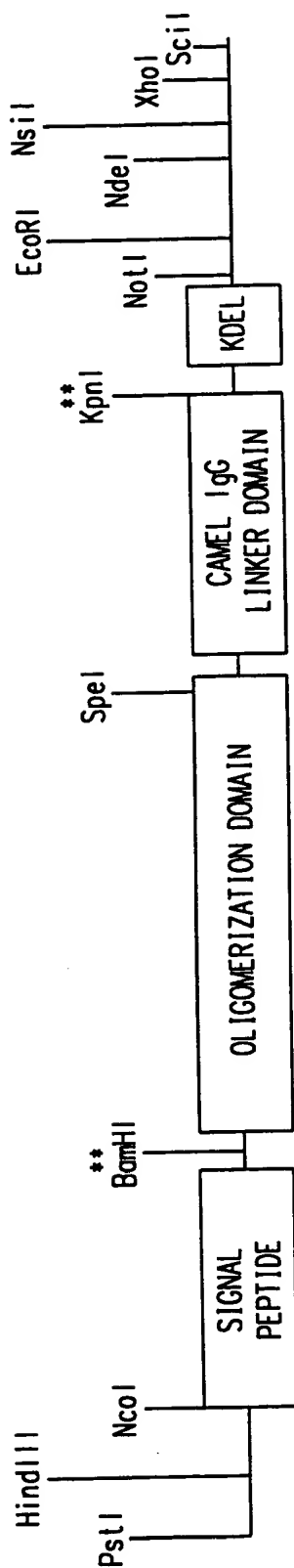


FIG. 6A

SIGNAL CLEAVAGE SITE

M R Y M I L G L L A L A V C S A A K K - G S S -

L G G D C C - S D L G P Q M L R E L Q E T N A A L Q D V R D W L R Q Q V R E I T F L K N T V M E C D A C G -

P Q P Q P Q P Q P Q P Q P K P Q P K P E P E - G T G S S E - K D E L

FIG. 6B

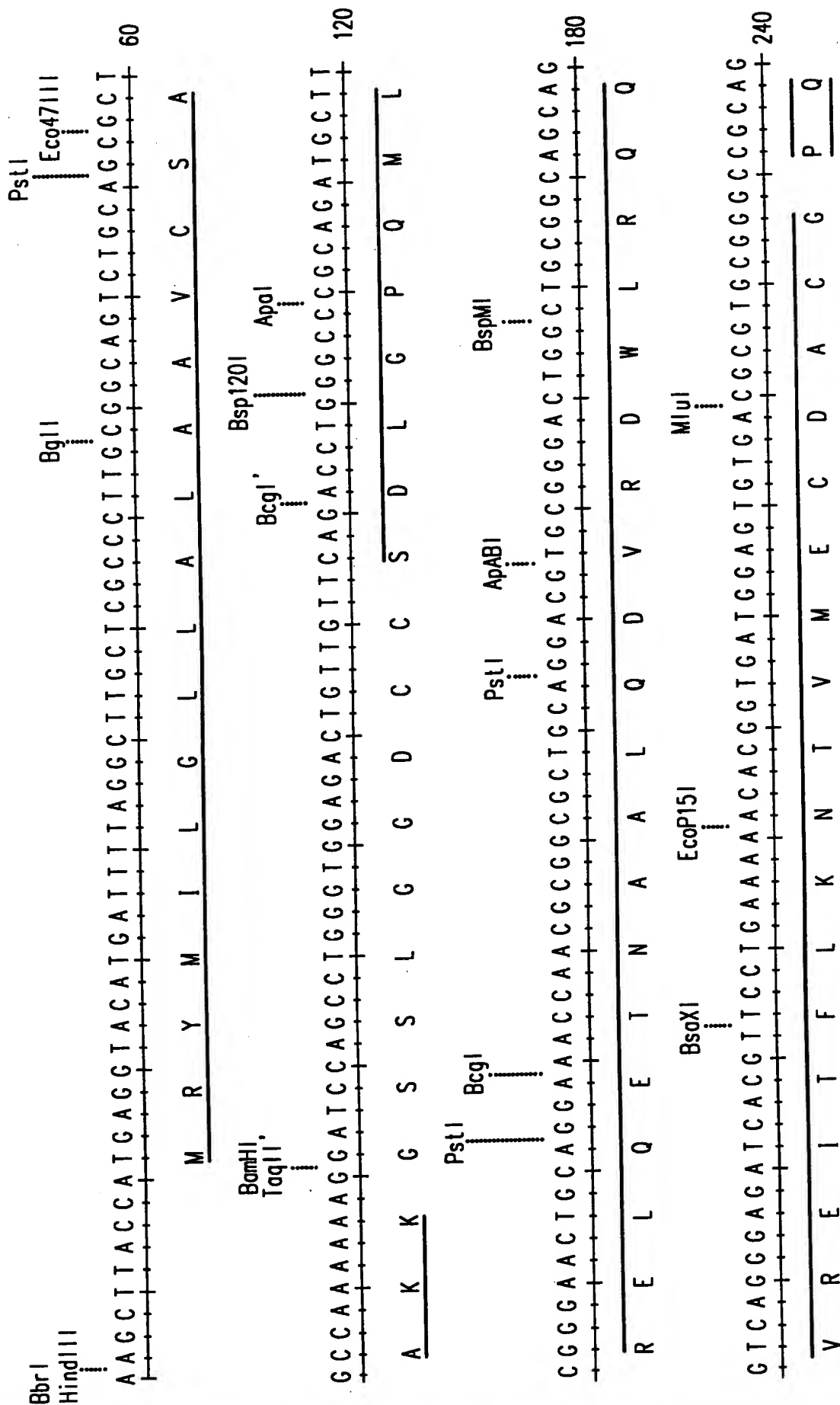


FIG. 6C

CCGCAGCCGAAACCGCAGCCGCGCAGCCGCGAACCAGCCGAAACCGGAA 300

P Q P K P Q P Q P Q P Q P Q P K P E

+

CCGGAAGGTACCGGATCATCAGAAACATGAGTTGTAGCGCGCCGACAAATTCATATG 360

Acc65I

KpnI

Eco52I

EcoRI

NdeI

Ppu10I

BfrBI

P E G T G S S E K D E L .

NsiI

XhoI

SciI

CATCTCGAG 369

FIG. 6D

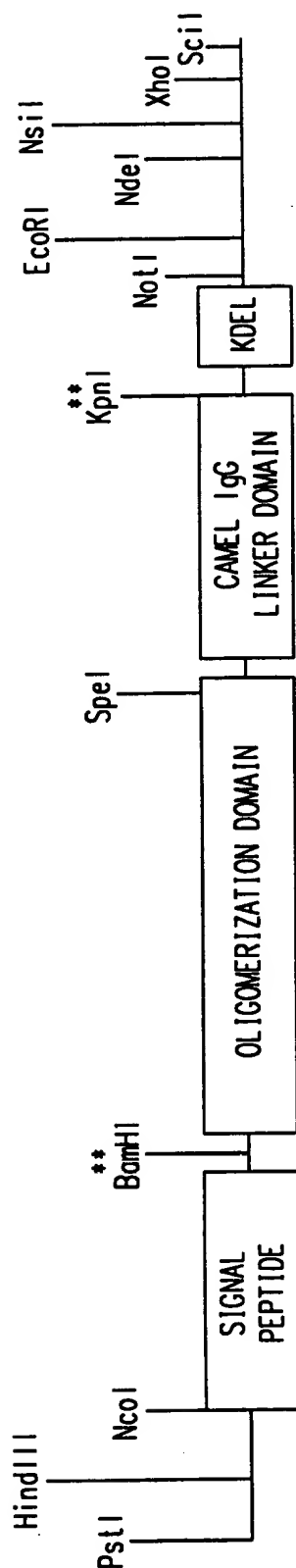


FIG. 7A

SIGNAL CLEAVAGE SITE

M R Y M I L G L L A L A A V C S A A K K - G S S -

L G G D C C - Q K L Q N L F I N F C I I L I C L L I C I I V M L L -

P Q P Q K P Q P Q P Q P K P Q P K P E P E - G T G S S E - K D E L

• RESIDUES CRITICAL FOR PENTAMER FORMATION

FIG. 7B

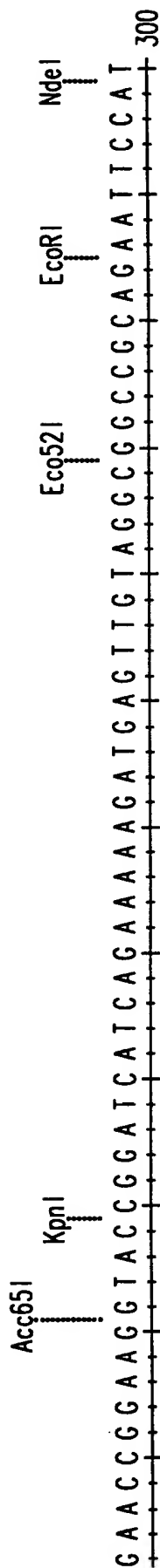
BbrI
 HindIII
 |
 A G C T T A C C A T G A G G T A C A T G A T T T A G G C T T G C T C G C C C T T G C G G C A G T C T G C A G C G C T
 |
 PstI
 |
 Eco47III
 |
 M R Y M I L G L L A L A A V C S A
 60

BamHI
 TaqII
 |
 G C C A A A A A G G A T C C A G C C T G G G T G G A G A C T G T T G T C A A A G C T A C A G A T C T A T T A T C
 |
 PshAI
 |
 A K K G S L G G D C C Q K L Q N L F I
 120

BsoBI
 |
 A A T T C T C T C A T C T T A A T A T G T C T C T G C T G A T C T G T A T C A T C G T G A T G C T T C T C C C G
 |
 N F C L I L I C L L L L I C I I V M L L P
 180

C A G C C G C A G C C G A A C C G C A G C C G C A G C C G C A G C C G A A C C G C A G C C G A A C C G
 |
 Q P Q P K P Q P Q P Q P Q P Q P K P K P
 240

FIG. 7C



E P E G T G S S E K D E L

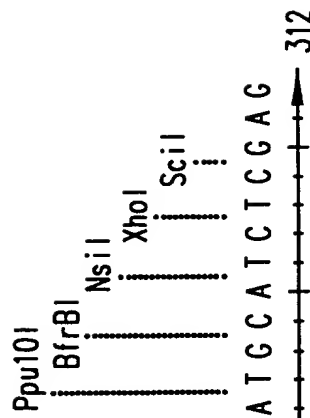


FIG. 7D

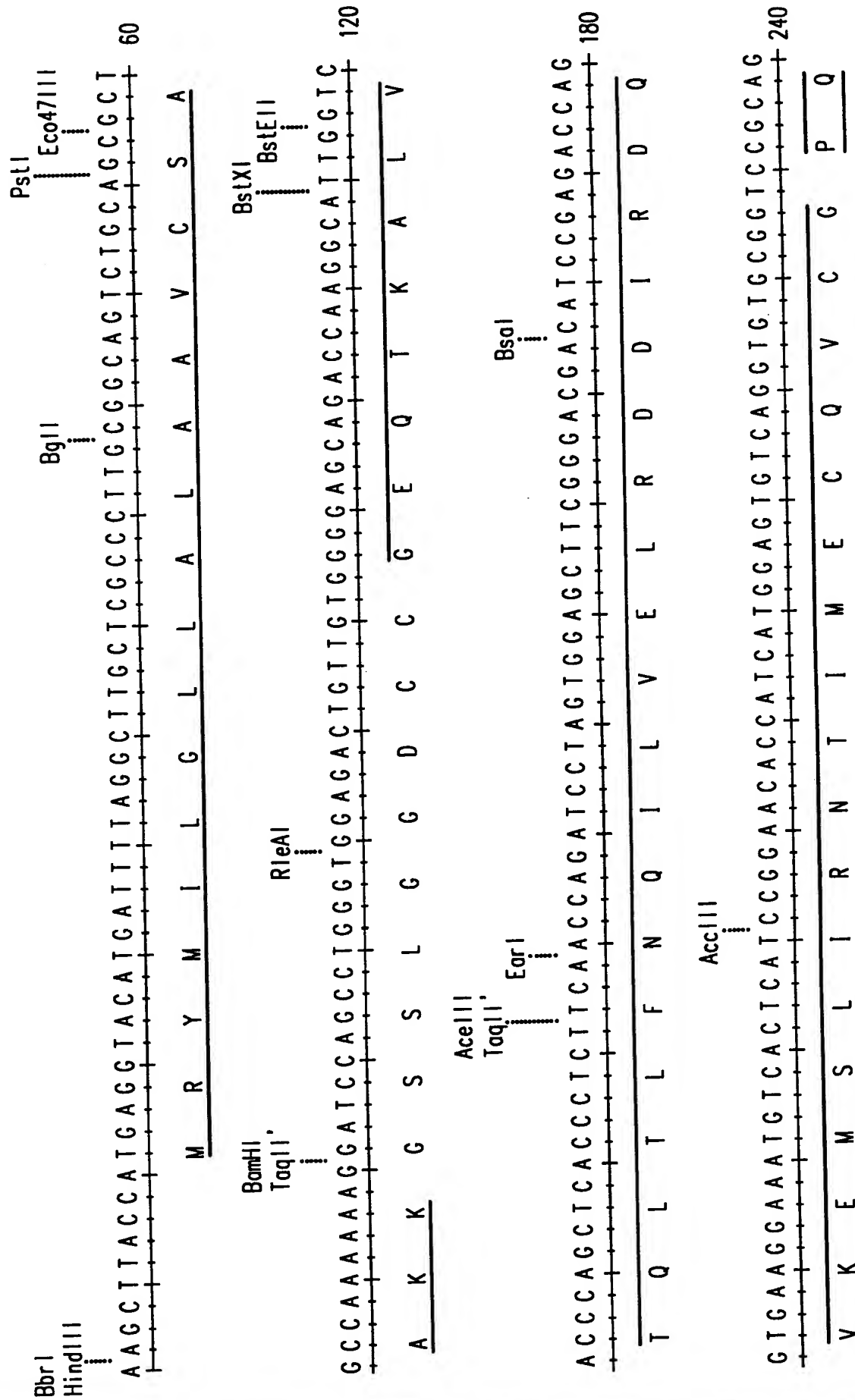


FIG. 8C

CCGCAGCCGAACCCGAGCCCGCAGCCCGCAGCCGAAACCCGAGCCGAAACCCGGA 300

P Q P K P Q P Q P Q P Q P K P Q P K P E

+

CCGGAAGGTACCGGATCATCAGAAAGATGAGTTGTAGCGCGCCGAGAAATCCATATG 360

Acc65I KpnI

Eco52I EcoRI NdeI Ppu10I BfrBI

P E G T G S S E K D E L

NsiI XhoI SciI CATCTCGAG 369

FIG. 8D

CCG CAG CCG A A CCG CAG CCG CAG CCG CAG CCG CAG CCG CAG CCG A A CCG CAG CCG CCG A A CCG G A A 300

P Q P K P Q P Q P Q P Q P Q P Q P K P E

+

CCG G A A G G T A C C G G A T C A T C A G A A A A G A T G A G T T G T A G C G C C G C C A G A A T T C C A T A T G 360

P E G T G S S E K D E L .

Nsi I
Xho I
Scl I
CATCTCGAG 369

Acc65I
Kpn I
Eco52I
EcoRI
Nde I
Ppu10I
BfrBI

FIG.9D

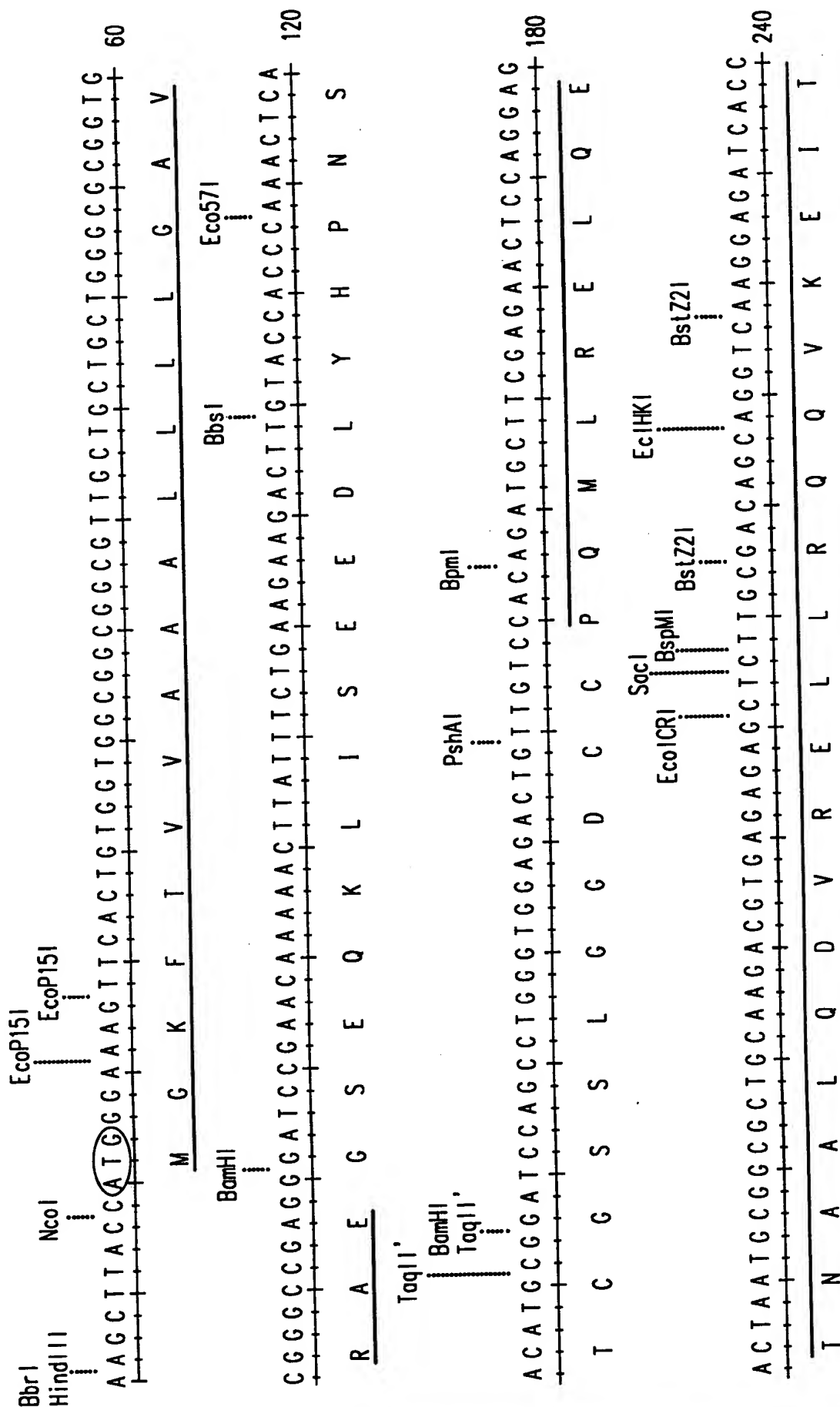


FIG. 10C

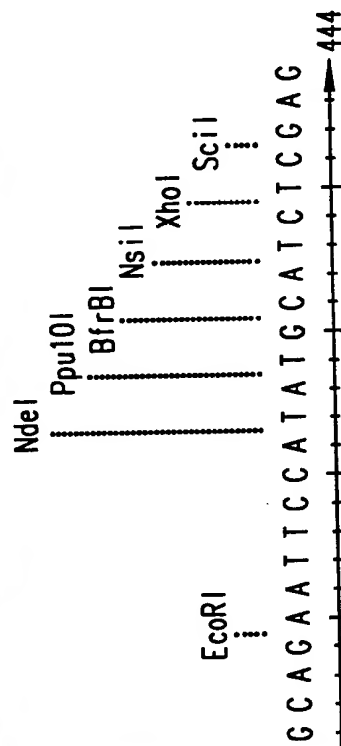
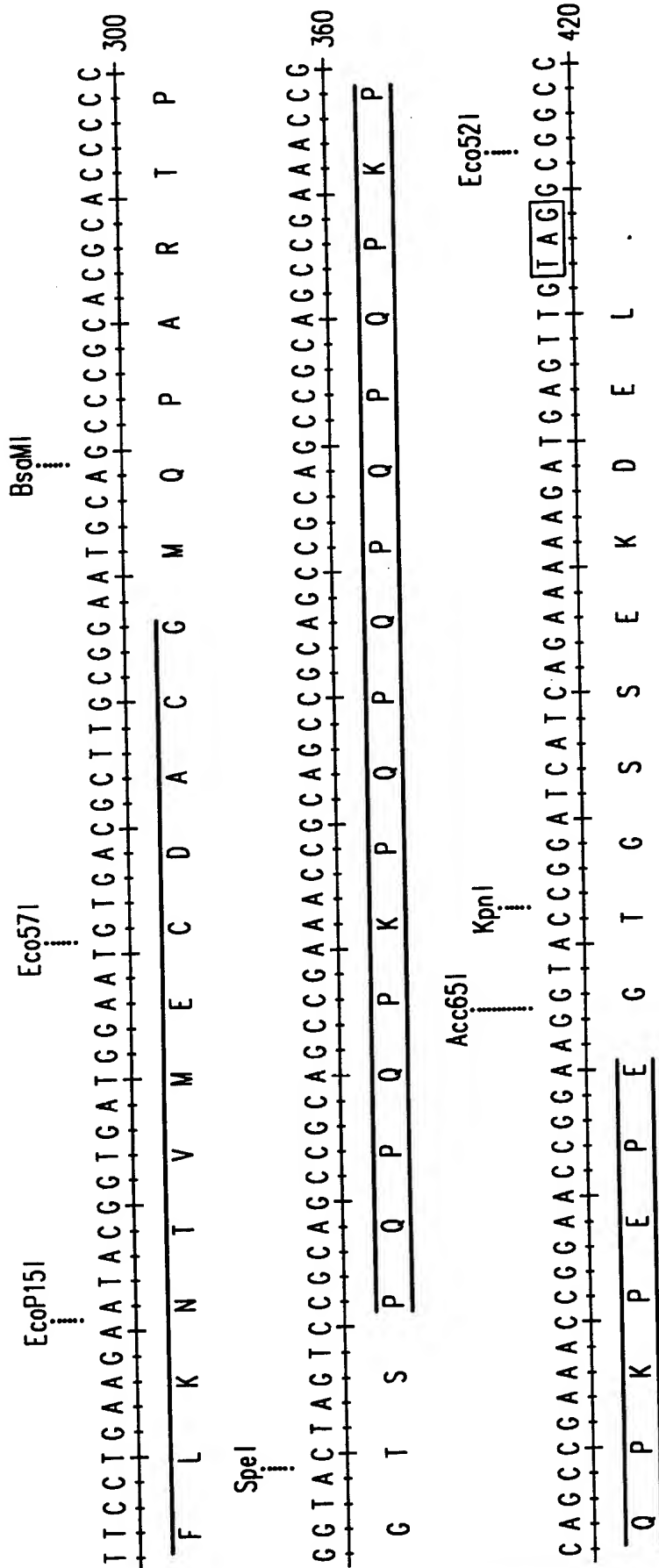
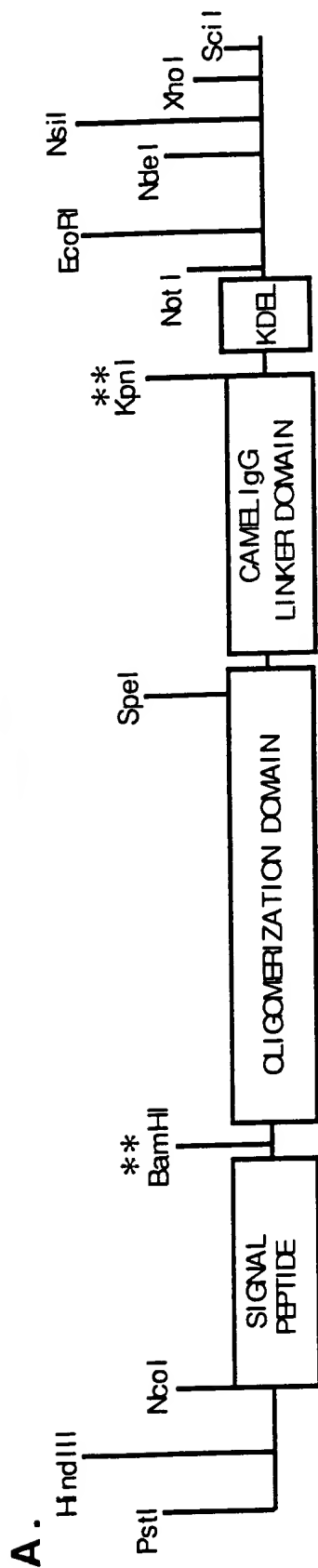


FIG. 10D

Figure 1: Schematic Representation of KDEL Receptor-Inhibitor Protein and Its Amino Acid Sequences (Rat COMP oligomerization domain)



B.

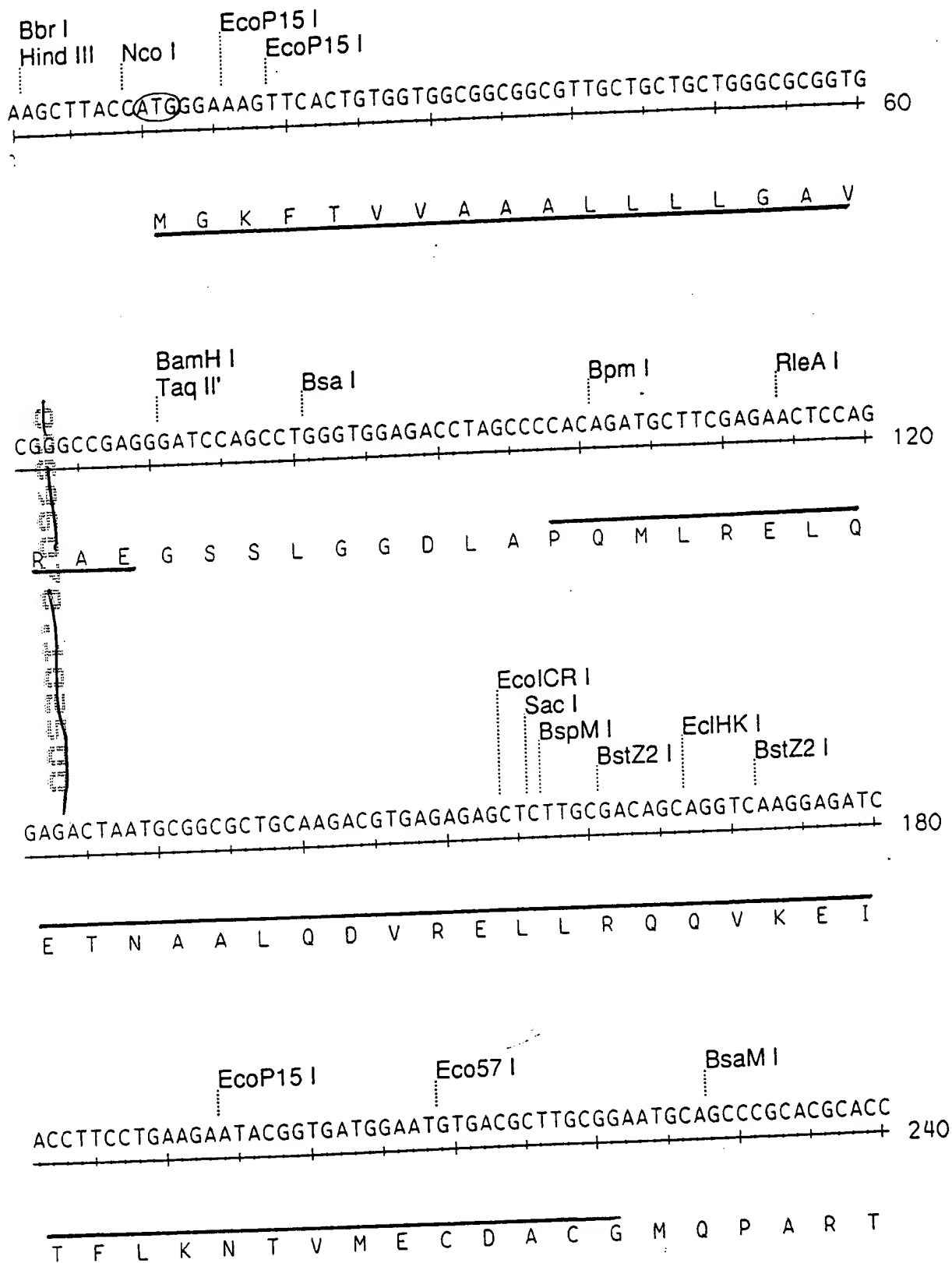
Signal cleavage site

MGKFTVVAALLLLGAVRAE-GSS -

LGGDLA-PQMLRELQETNAALQDVRELLRQQVKEITFLKNTVMECDACG-MQPARTPGTS-

PQPQPKPQPQPQPQPKPEPE-GTGSSE-KDEL

FIGURE 1C.



314f8 (sheet 3 of 3)

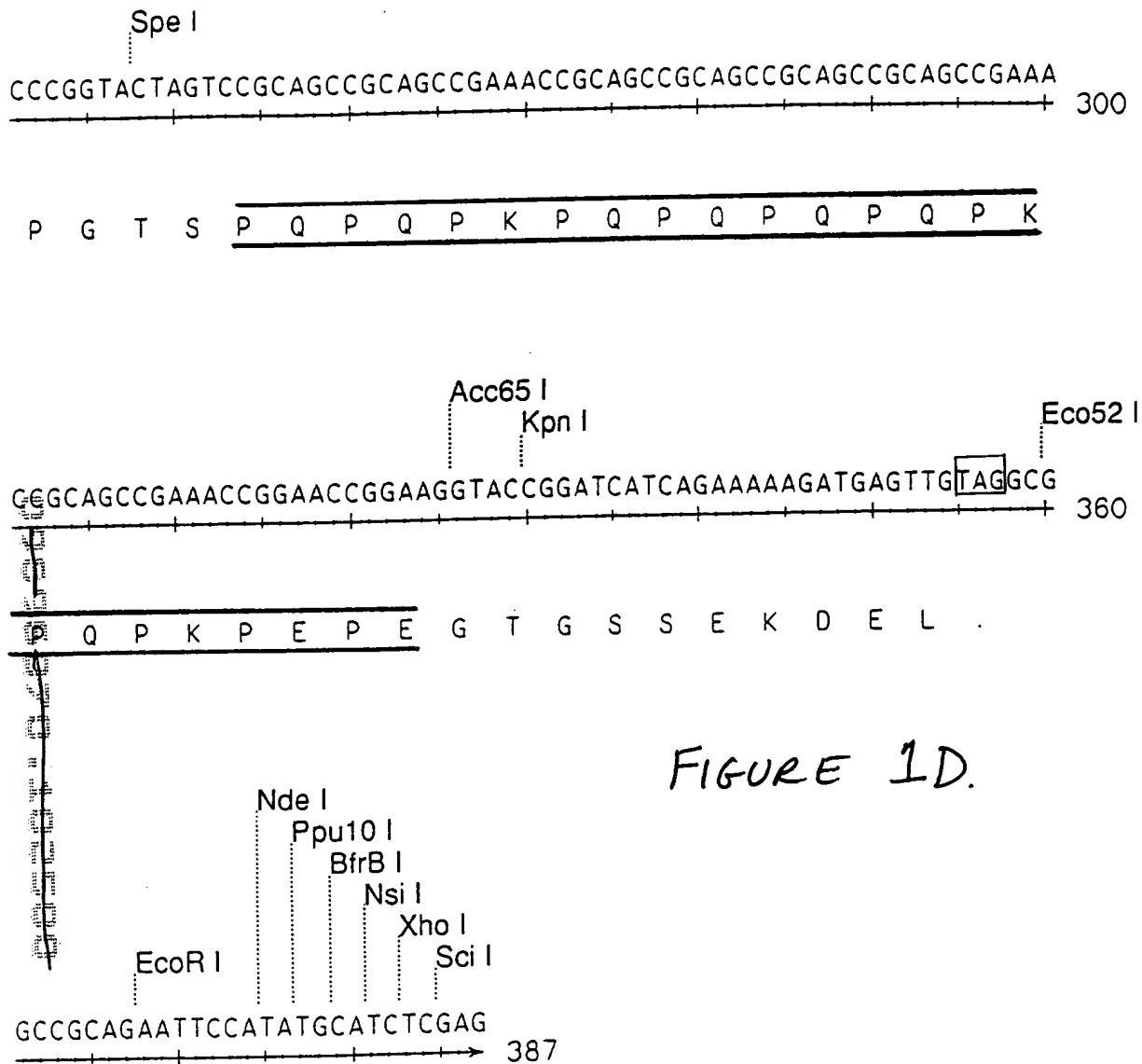
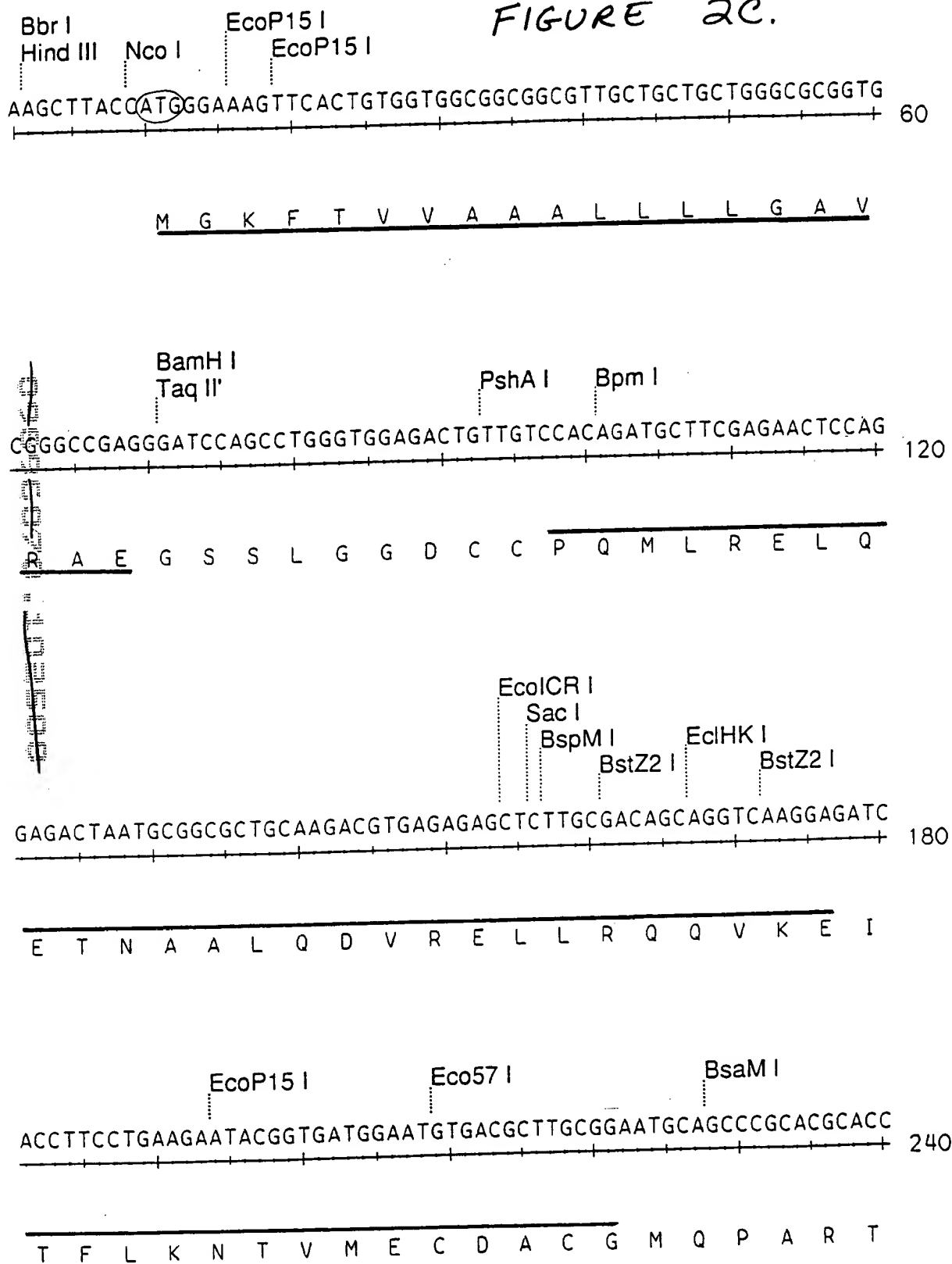


FIGURE 1D.

31:88 (sheet 5 of 30)

FIGURE 2C.



314.8 (sheet 6 of 30)

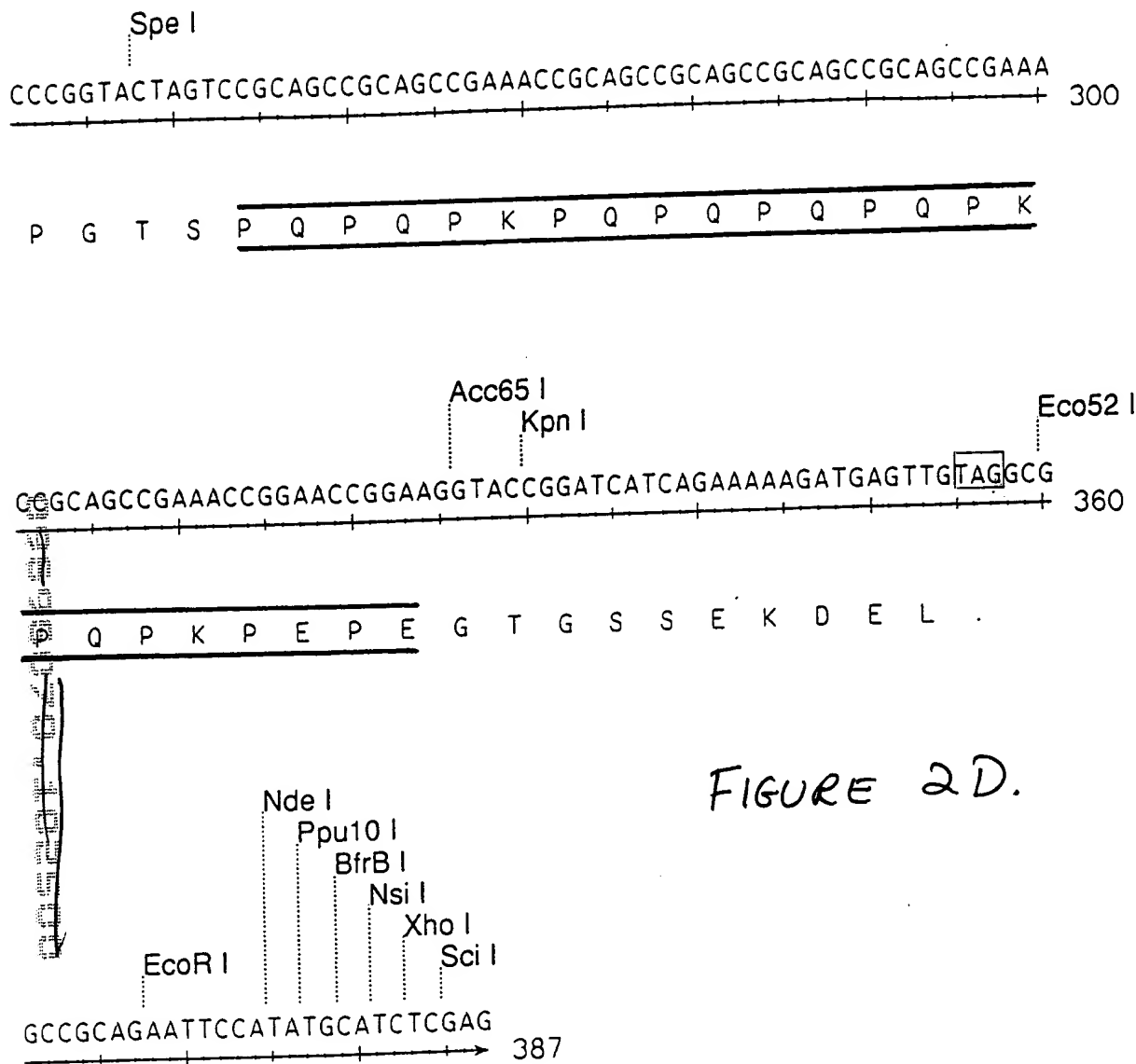
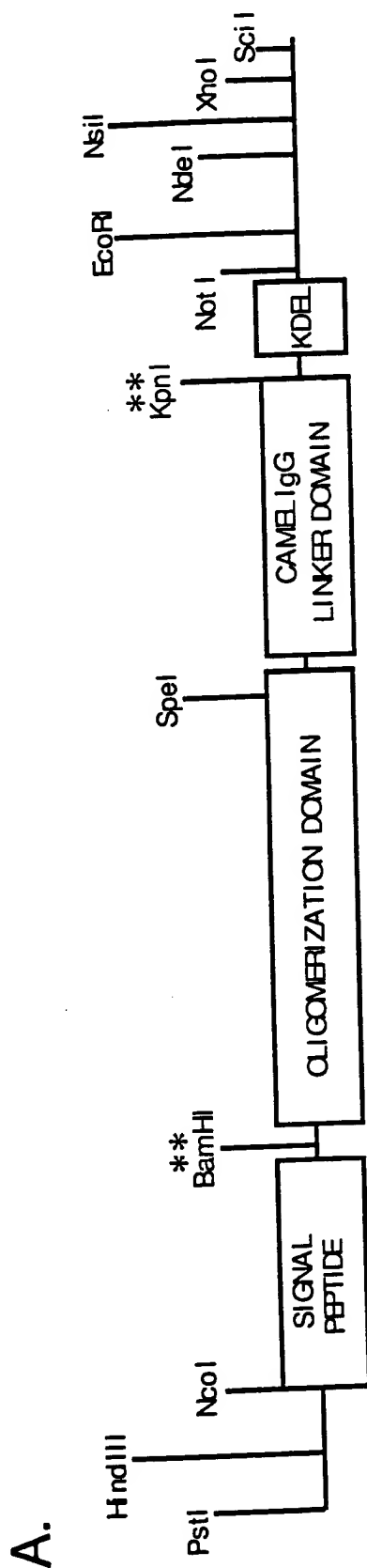


FIGURE 2D.

Figure 3: MOUSE TSP3 OLIGOMERIZATION DOMAIN KDEL
RECEPTOR INHIBITOR PROTEIN



B.

Signal cleavage site

MGKFTVVAALLLLGAVRAE-GSS -

LGGDCC-KALVTQLTFNQILVELRDDIRDQVKEMSLIRNTIMECQVCG-

PQPQKPQPQPQPQPQKPEPE-GTGSSE-KDEL

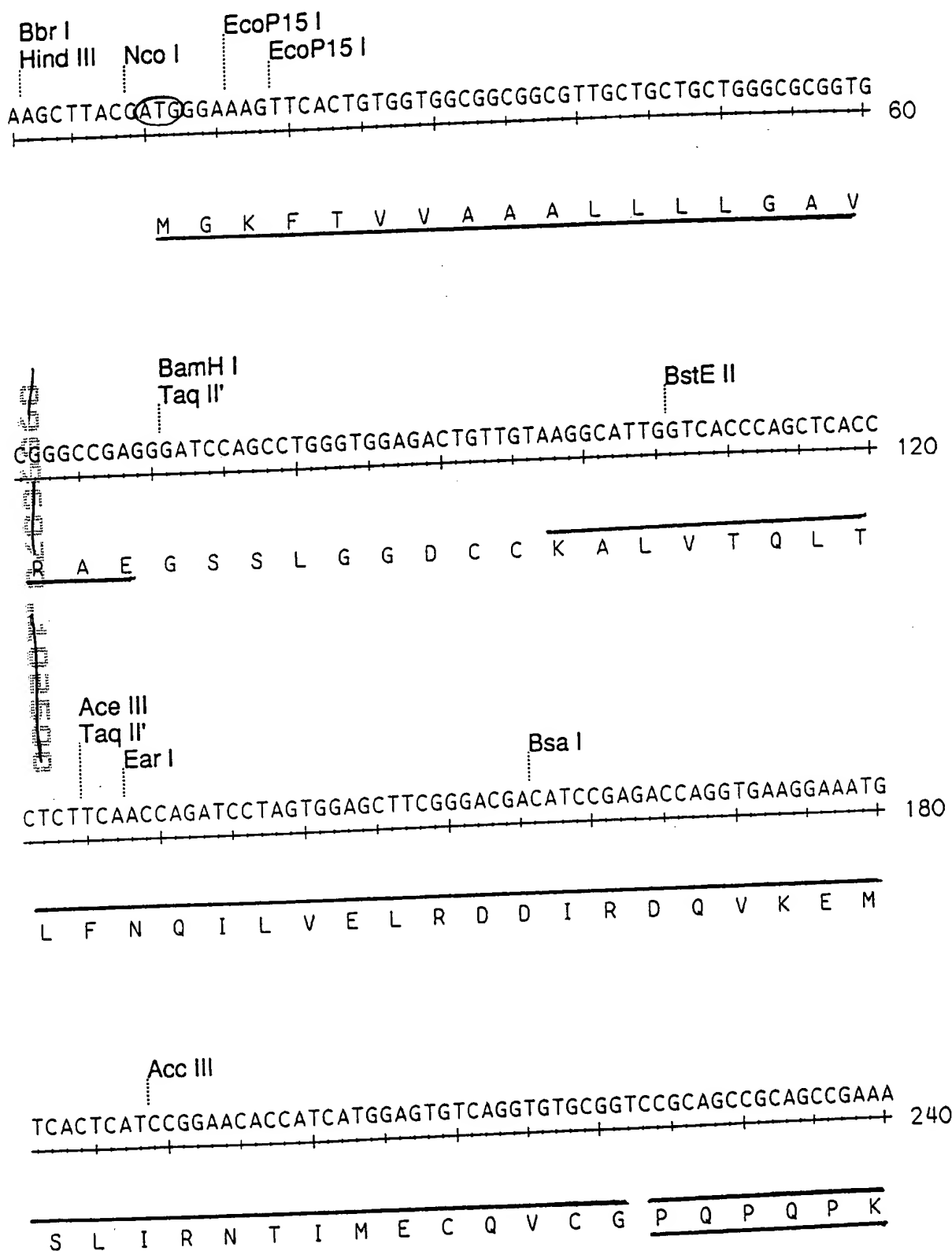


FIGURE 3C.

31488 (sheet 9 of 30)

CCGCAGCCGCAGCCGCAGCCGCAGCCGAAACCGCAGCCGAAACCGGAACCGGAAGGTACC 300
Acc65 I
Kpn I

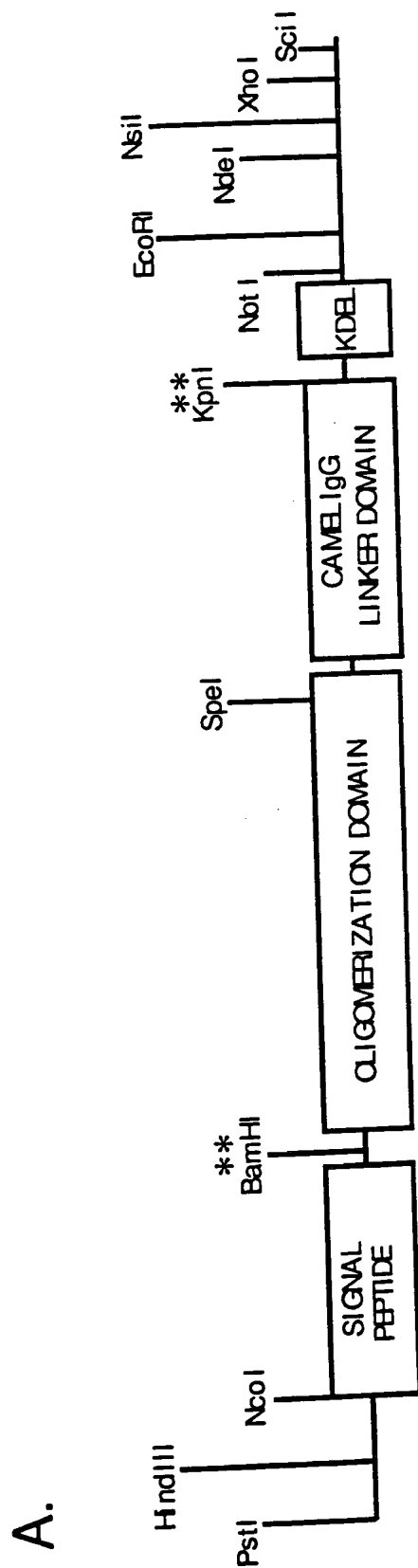
P Q P Q P Q P Q P K P Q P K P E P E G T

GGATCATCAGAAAAAGATGAGTTGTAGGCGGCCGCAGAATTCCATATGCATCTCGAG 357
Eco52 I EcoR I Nde I Ppu10 I BfrB I Nsi I Xho I Sci I

G S S E K D E L .

FIGURE 3D

Figure 4: MOUSE TSP3 OLIGOMERIZATION DOMAIN KDEL
RECEPTOR INHIBITOR PROTEIN



B.

Signal cleavage site

MGKFTVVAALLLLGAVRAE-GSS -

LGGDCC-GEQTKALVTQLTLFNQILVELRDDIRDQVKEMSLIRNTIMECQVCG-

PQPQPKPQPQPQPQPKPQPKPEPE-GTGSSE-KDEL

31488 (sheet 11 of 30)

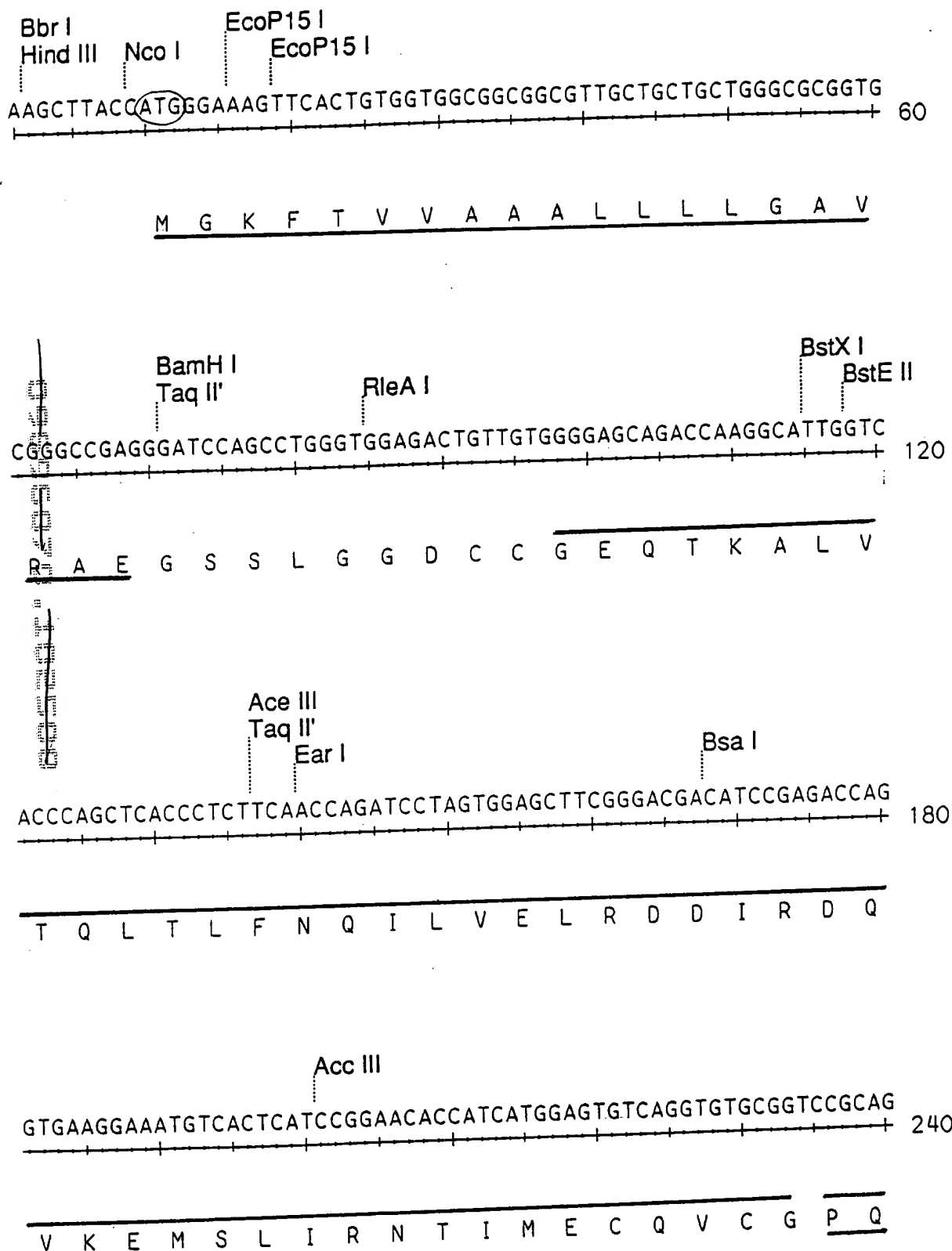


FIGURE 4C.

31488 (sheet 12 of 30)

CCGCAGCCGAAACCGCAGCCGCAGCCGCAGCCGCAGCCGAAACCGCAGCCGAAACCGGAA 300

P Q P K P Q P Q P Q P Q P K P Q P K P E

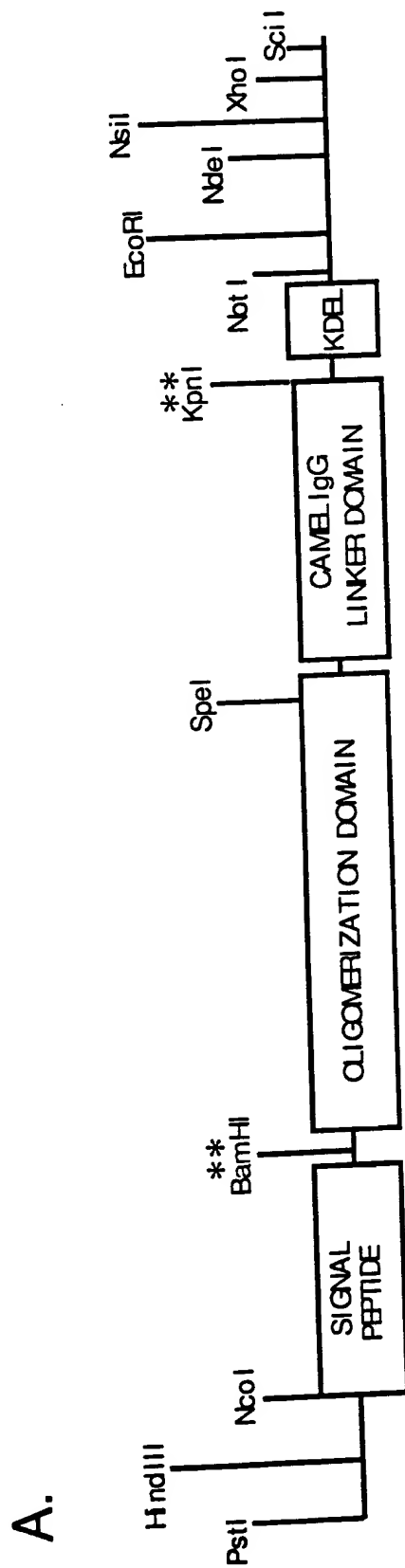
Acc65 I Kpn I Eco52 I EcoR I Nde I Ppu10 I BfrB I
CCGGAAGGTACCGGATCATCAGAAAAAGATGAGTTG TAG GCGGCCGCAGAATTCCATATG 360

P E G T G S S E K D E L .

Nsi I Xho I Scl I
CATCTCGAG 369

FIGURE 4D.

Figure 5: XENOPUS TSP4 OLIGOMERIZATION DOMAIN KDEL
RECEPTOR INHIBITOR PROTEIN



B.

Signal cleavage site

MGKFTVVAALLLLGAVRAE-GSS -

LGGDCC-GDVSRQLIGQITQMNQMLGELRDVMRQQVKETMFLRNTIAECQACG-
PQPQKPQPQPQPQPKPQKPEPE-GTGSSE-KDEL

31488 (sheet 14 of 30)

Bbr I
Hind III Nco I EcoP15 I
EcoP15 I
AAGCTTACCATGGGAAAGTTCACTGTGGTGGCGGCGGCGTTGCTGCTGCTGGGCGCGGTG 60

M G K F T V V A A A L L L L G A V

BamH I
Taq II' Aat II Msp20 I
CGGGCCGAGGGATCCAGCCTGGGTGGAGACTGTTGTGGTGACGTCAGCAGACAGTTGATT 120

R A E G S S L G G D C C G D V S R Q L I

Bal I Msp20 I EcoP15 I AlwN I EcoICR I
Sac I BspH I
BspM I
GGCCAGATAACCCAAATGAATCAGATGCTGGGAGAGCTCCGAGATGTCATGAGACAGCAG 180

G Q I T Q M N Q M L G E L R D V M R Q Q

Bsa I EcoP15 I BsrD I Bce83 I
BsaM I Stu I BstX I
GTGAAAGAGACCATGTTCTTGAGAAACACCATTGCAGAATGCCAGGCCTGTGGCCCGCAG 240

V K E T M F L R N T I A E C Q A C G P Q

FIGURE 5C

31488 (sheet 15 of 30)

CCGCAGCCGAAACCGCAGCCGCAGCCGCAGCCGCAGCCGAAACCGCAGCCGAAACCGGAA 300

P Q P K P Q P Q P Q P K P Q P K P E

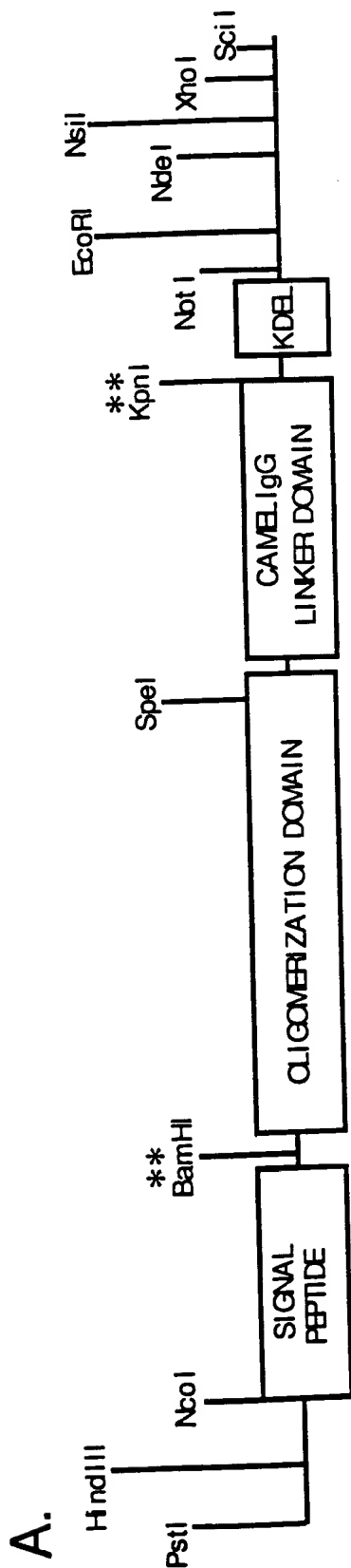
Acc65 I Kpn I Eco52 I EcoR I Nde I Ppu10 I BfrB I
CCGGAAGGTACCGGATCATCAGAAAAAGATGAGTTG TAG GCGGCCGCAGAATTCCATATG 360
ATAC

P E G T G S S E K D E L .

Nsi I Xho I Scl I
CATCTCGAG 369

FIGURE 5D.

Figure 6: HUMAN COMP OLIGOMERIZATION DOMAIN
KDEL RECEPTOR INHIBITOR PROTEIN



B.

Signal cleavage site

↓

MRYMILGLLALAAVCSAAKK-GSS -

LGGDCC-SDLGPQMLRELQETNAALQDVRDWLRQQVREITFLKNTVMECDACG-

PQPQKPQPQPQPQPQPQPKEPE-GTGSSE-KDEL

31488 (sheet 17 of 30)

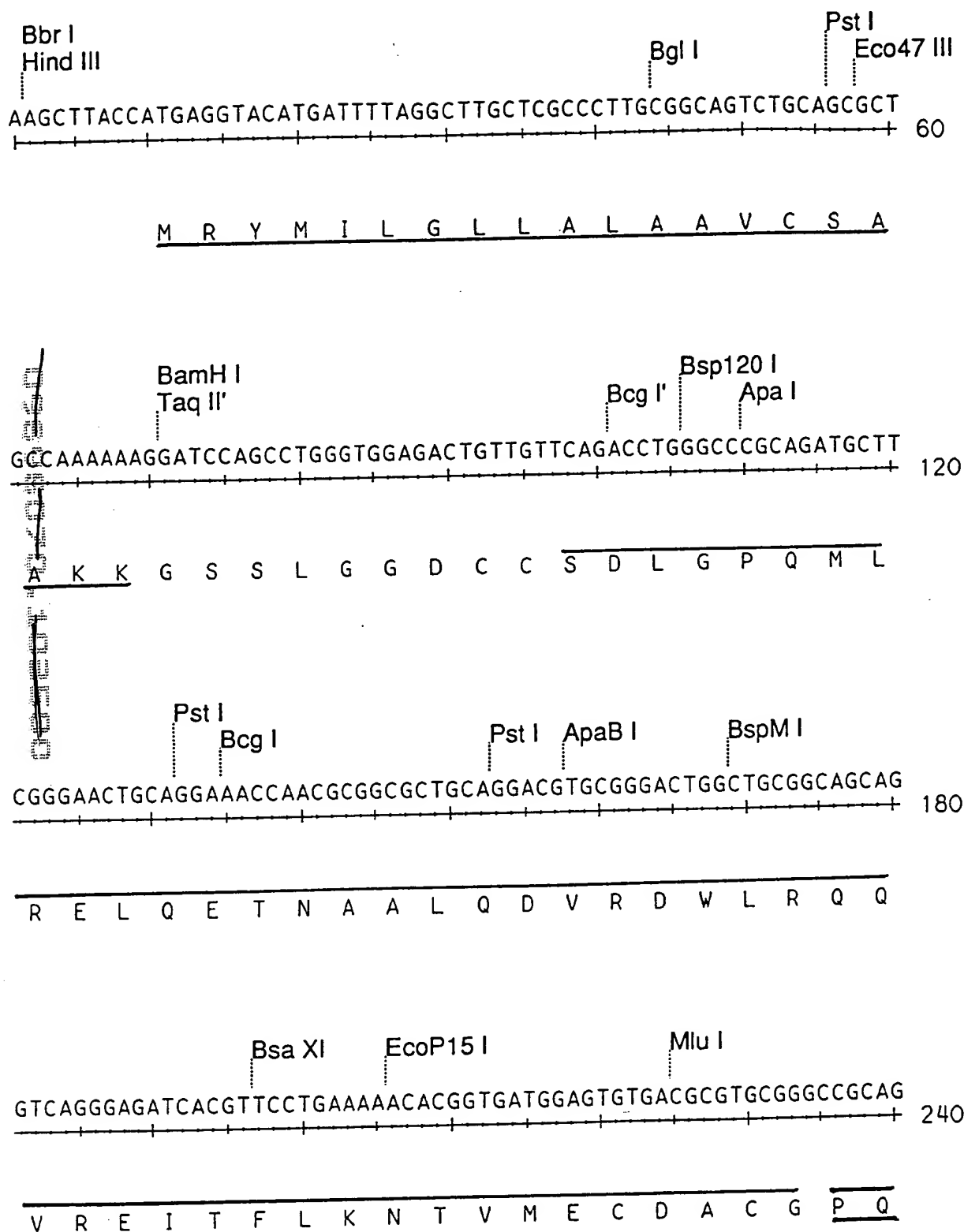


FIGURE 6C.

31488 (sheet 18 of 30)

CCGCAGCCGAAACCGCAGCCGCAGCCGCAGCCGCAGCCGAAACCGCAGCCGAAACCGGAA 300

P Q P K P Q P Q P Q P Q P K P Q P K P E

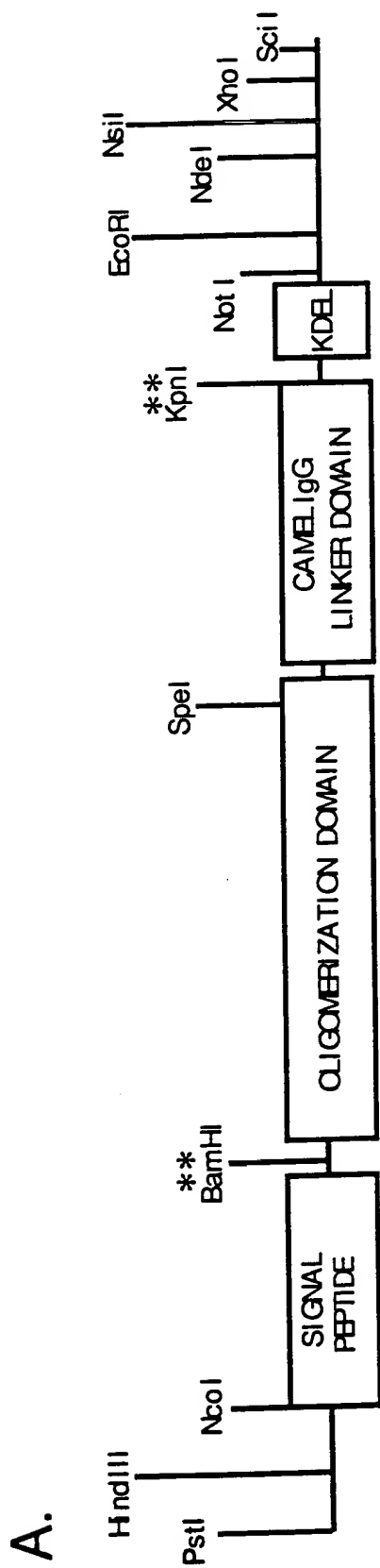
Acc65 I Kpn I Eco52 I EcoR I Nde I Ppu10 I BfrB I
CCGGAAGGTACCGGATCATCAGAAAAAGATGAGTTGTAGGCGGCCGCAGAATTCCATATG 360

P E G T G S S E K D E L .

Nsi I Xho I Sci I
CATCTCGAG 369

FIGURE 6D.

Figure 7: HUMAN PLB OLIGOMERIZATION DOMAIN KDEL RECEPTOR INHIBITOR PROTEIN



മ്

Signal cleavage site

MRYMILGLLALAAVCSAKK-GSS-

LG DCC-QKLQNLFINFCILICLLICIIVMLL-

POPOKPPQPPQPKPPQPE-GTGSSE-KDEL

- Residues critical for pentamer formation

3.488 (sheet 20 of 30)

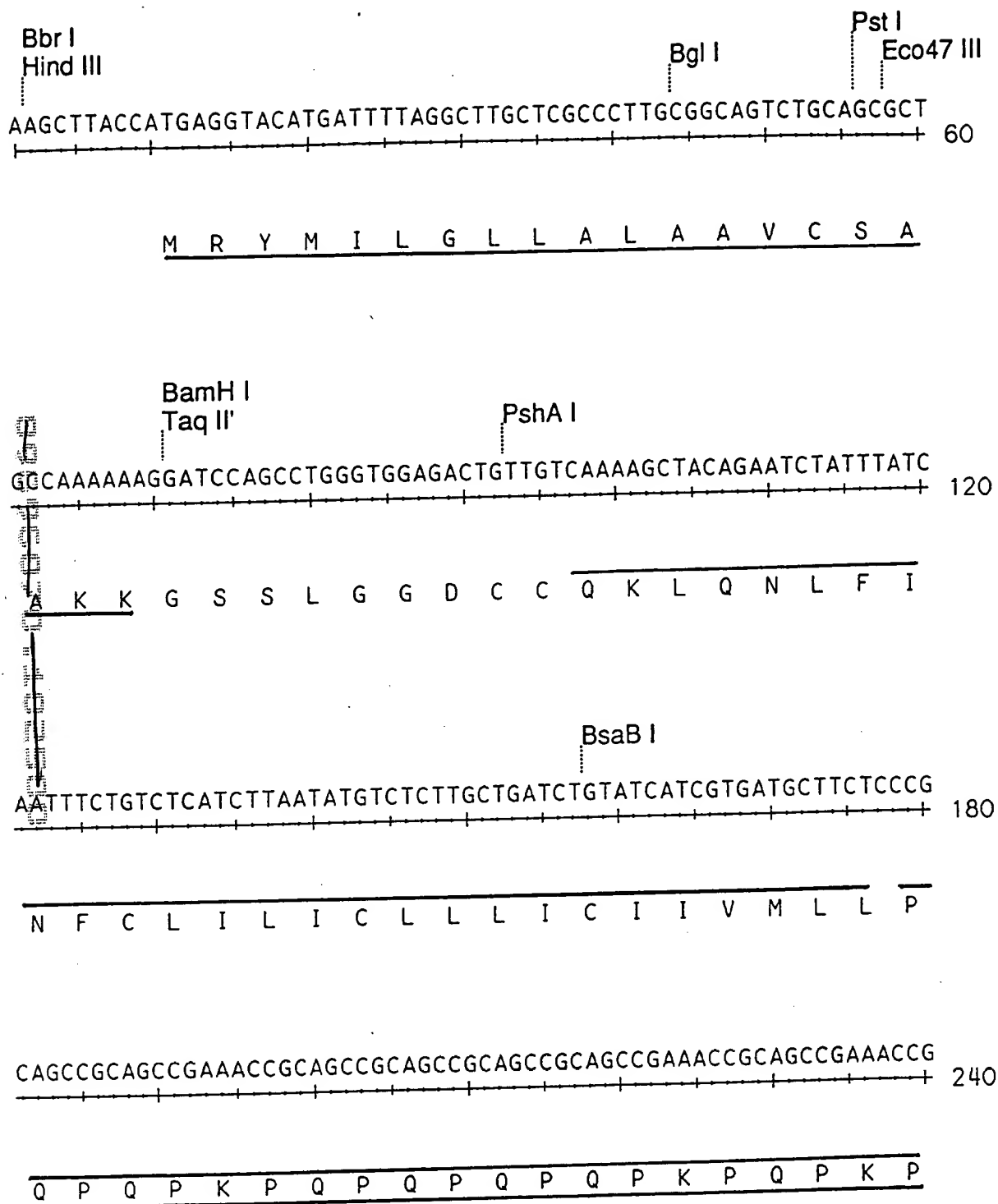


FIGURE 7C.

51488 (sheet 21 of 30)

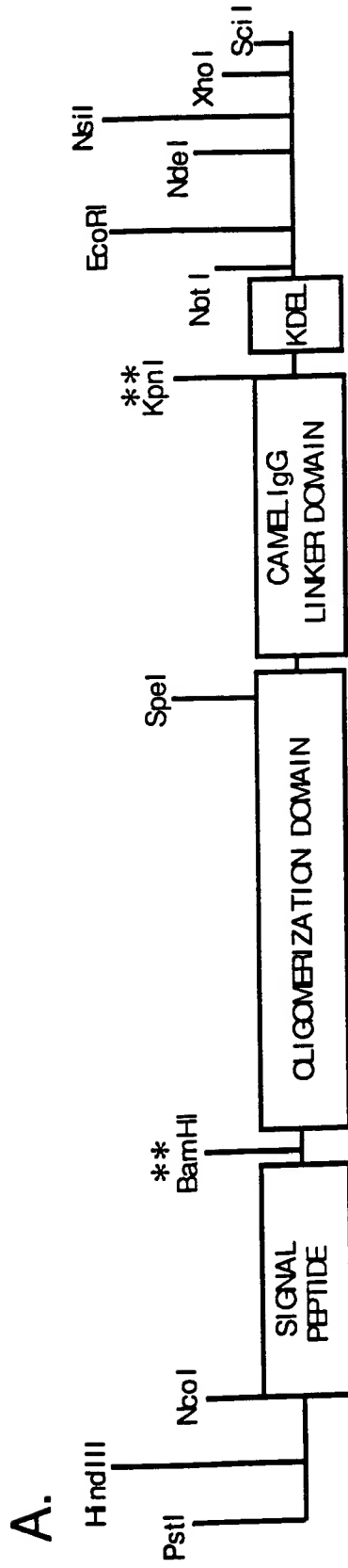
Acc65 I Kpn I Eco52 I EcoR I Nde I
 GAACCGGAAGGTACCGGATCATCAGAAAAAGATGAGTTGTAGGCGGCCGCAGAATTCCAT 300

E P E G T G S S E K D E L .

Ppu10 I
 BfrB I
 Nsi I
 Xho I
 Sci I
 ATGCATCTCGAG 312

FIGURE 7D.

Figure 8: HUMAN TSP3 OLIGOMERIZATION DOMAIN KDEL
RECEPTOR INHIBITOR PROTEIN



B.

Signal cleavage site



MRYMILGLLALAAVCSAAKK-GSS -

LGGDCC-GEQTKALVTQLTLFNQILVELRDDIRDQVKEMSLIRNTIMECQVCG-

PQPQPKPQPQPQPQPKPQPKPEPE-GTGSSE-KDEL

31488 (sheet 23 of 30)

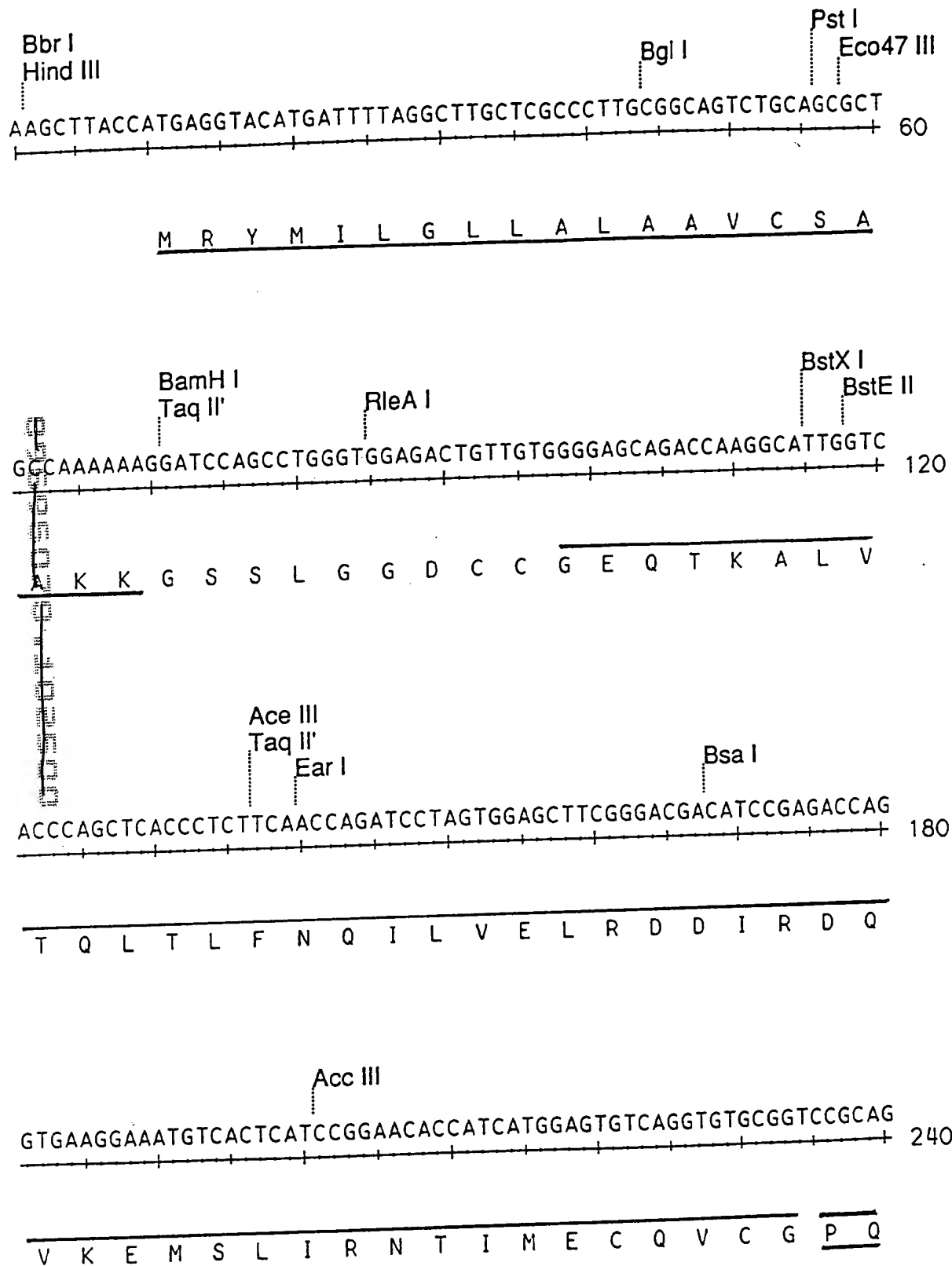


FIGURE 8C.

31488 (sheet 24 of 30)

CCGCAGCCGAAACCGCAGCCGCAGCCGCAGCCGCAGCCGAAACCGCAGCCGAAACCGGAA 300

P Q P K P Q P Q P Q P Q P K P Q P K P E

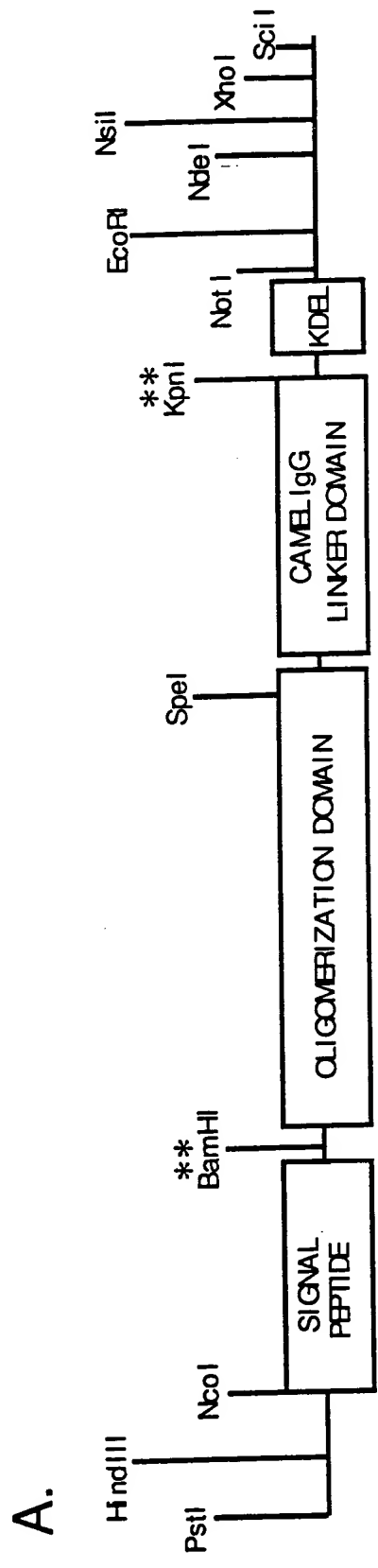
Acc65 I Kpn I Eco52 I EcoR I Nde I Ppu10 I BfrB I
CCGGAAGGTACCGGATCATCAGAAAAAGATGAGTTGTAGGCGGCCGCAGAATTCCATATG 360

P
P E G T G S S E K D E L .


Nsi I Xho I Sci I
CA ECTCGAG 369

FIGURE 8D.

Figure 9: HUMAN TSP4 OLIGOMERIZATION DOMAIN KDEL
RECEPTOR INHIBITOR PROTEIN



B.

Signal cleavage site

MRYMILGLLALAAVCSAAKK-GSS -
 LGGDCC-GDFNRQFLGQMTQLNQLLGEVKDLLRQQVKETSFRLNTIAECQACG-
PQPQPKPQPQPQPQPQPKPQPQKPEPE-GTGSSE-KDEL

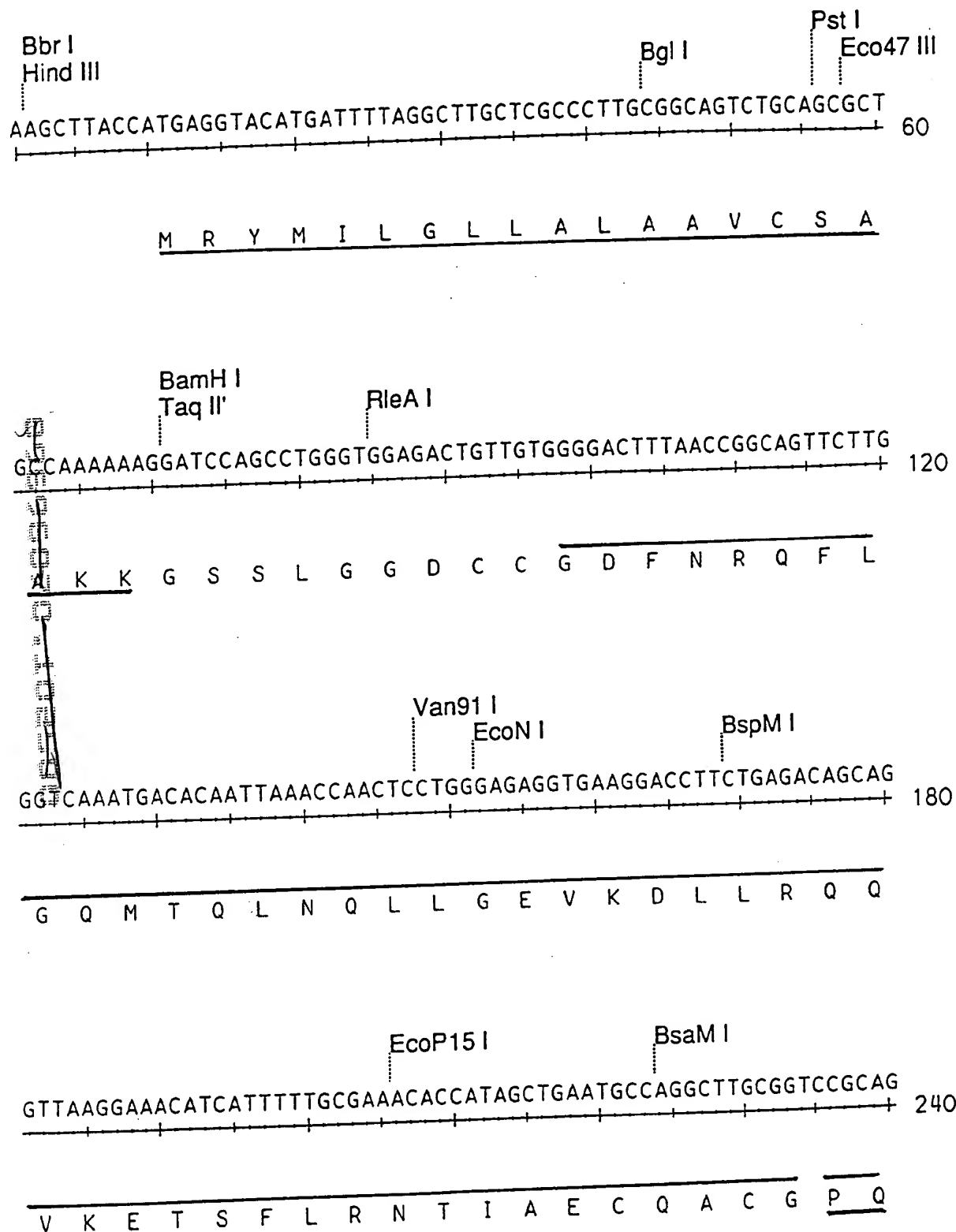


FIGURE 9C.

31488 (sheet 27 of 30)

CCGCAGCCGAAACCGCAGCCGCAGCCGCAGCCGCAGCCGAAACCGCAGCCGAAACCGGAA 300

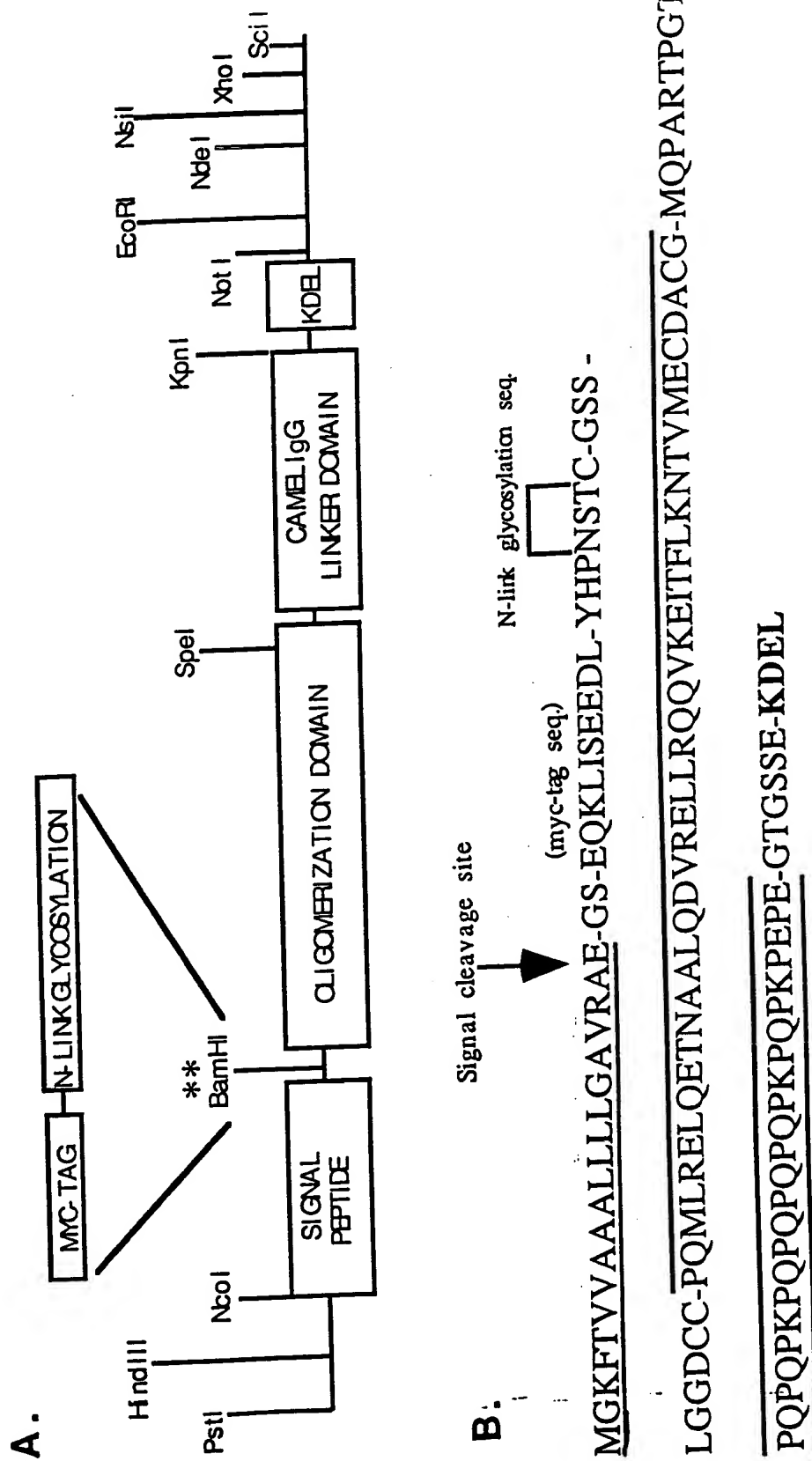
P Q P K P Q P Q P Q P Q P K P Q P K P E

Acc65 I Kpn I Eco52 I EcoR I Nde I Ppu10 I BfrB I
CCGGAAGGTACCGGATCATCAGAAAAAGATGAGTTGTAGGCGGCCGCAGAATTCCATATG 360

E
P E G T G S S E K D E L .
Nsi I Xho I Sci I
CACTCGAG 369

FIGURE 9D.

Figure 10: KDEL Inhibitor Protein with myc-tag and a N-linked Glycosylation Sequence



Bbr I EcoP15 I
Hind III Nco I EcoP15 I
AAGCTTACCATGGGAAAGTTCACTGTGGTGGCGGCGGCGTTGCTGCTGCTGGGCGCGGTG 60

M G K F T V V A A A L L L L G A V

BamH I Bbs I Eco57 I
CGGGCCGAGGGATCCGAACAAAACTTATTTCTGAAGAAGACTTGTACCACCCAAACTCA 120

R A E G S E Q K L I S E E D L Y H P N S

Taq II' BamH I PshA I Bpm I
Taq II'
ACA TCGGATCCAGCCTGGGTGGAGACTGTTGTCCACAGATGCTTCGAGAACTCCAGGAG 180

T C G S S L G G D C C P Q M L R E L Q E

EcoICR I Sac I BspM I EclHK I BstZ2 I
ACTAATGCGGCGCTGCAAGACGTGAGAGAGCTCTTGCGACAGCAGGTCAAGGAGATCACC 240

T N A A L Q D V R E L L R Q Q V K E I T

FIGURE 10C.

30188 (sheet 30 of 30)

EcoP15 I Eco57 I BsaM I

TTCCTGAAGAATACGGTGATGGAATGTGACGCTTGCGGAATGCAGCCCGCACGCACCCCC 300

F L K N T V M E C D A C G M Q P A R T P

Spe I

GGTACTAGTCCGCAGCCGCAGCCGAAACCGCAGCCGCAGCCGCAGCCGCAGCCGAAACCG 360

G T S P Q P Q P K P Q P Q P Q P Q P K P

Acc65 I Kpn I Eco52 I

CAGCCGAAACCGGAACCGGAAGGTACCGGATCATCAGAAAAAGATGAGTTG TAG GCGGCC 420

Q P K P E P E G T G S S E K D E L

EcoR I Nde I Ppu10 I BfrB I Nsi I Xho I Sci I

GCAGAATTCCATATGCATCTCGAG 444

FIGURE 10D.